



RED DEER
FULL TIME HEALTH DISTRICT

GOVERNMENT OF THE PROVINCE OF ALBERTA
DEPARTMENT OF PUBLIC HEALTH

DISEASES COMMUNICATED BY INTESTINAL DISCHARGES

Diseases communicated by intestinal discharges include Typhoid Fever, Paratyphoid Fever, Asiatic Cholera, Hookworm Disease, several forms of Dysentery and a few other parasitic infections. Of the diseases mentioned above, Typhoid, Paratyphoid and Dysentery are those with which we are concerned in Alberta. Cholera and Hookworm Disease are practically unknown in the Province, and accordingly will not be dealt with in any detail in this bulletin.

TYPHOID FEVER

The Typhoid bacillus enters the body by the mouth. This may occur through the drinking of infected milk or water; by the eating of infected foods; or, as sometimes occurs in children, by putting infected objects, fingers which have come in contact with the bacilli, et cetera, into the mouth. From the mouth the bacilli pass through the digestive tract to the intestines, where they rapidly multiply. Eventually, during assimilation, they pass through the mucous membrane of the intestines and enter the blood, so that Typhoid is chiefly regarded as a blood infection.

The patient usually does not show evidence of the disease for from ten to fourteen days after having ingested the germs, although statistics on record show considerable variation from the above figures, depending chiefly on the degree of infection. Typhoid Fever is no respecter of rich or poor; it attacks those in robust health, of both sexes and all ages. The case fatality rate averages about one death to every ten cases.

During the period a person is ill with the disease, his intestinal discharges and his urine teem with the Typhoid bacilli and if not properly cared for are capable of spreading the disease very rapidly. Thus it is that nurses and those caring for Typhoid patients must take extraordinary precautions, both to protect themselves and also the general public, by carefully disinfecting the stools and urine of the sick person, as well as all utensils used in the care of the patient.

Unfortunately, some patients, after having had the disease, continue to harbour the Typhoid bacilli in their excretory system, with the result that for the remainder of their lives they continue

to give them off, regularly or at periodic intervals, with their intestinal discharges and urine. These persons are classified as "carriers", and these carriers are a real menace to the community unless they adhere strictly to the precautions which are essential to prevent the spread of infection.

Methods by Which Typhoid Fever Is Spread

1. Water

Most Typhoid cases are traceable to the patient having drunk water which has become contaminated by the intestinal discharges of a Typhoid case, or of a carrier. Practically every river and stream in a well-populated country at times becomes contaminated with human excreta. Because of the fact that the contamination may only occur periodically, and because individuals are willing to take a chance on river water because of the fact that on a former occasion drinking water from the same stream produced no ill effects, it becomes particularly difficult for health authorities to impress upon people the danger of drinking raw stream or river water. When one realizes that a single intestinal discharge of one patient dumped into a river, the size of many of the smaller Alberta rivers, has transferred the disease to six other people drinking water from the stream ten miles below, he is impressed with the danger of using any raw water.

There is an erroneous opinion in the minds of many that Typhoid Fever may be contracted from the air laden with the odour of stagnant pools, et cetera. Such is not the case, however; the Typhoid germs are not found in foul-smelling air.

Well waters sometimes become contaminated from nearby privy pits or other types of toilets. The intestinal discharges of every person teem with bacterial life, known as colon bacilli, which in themselves do not produce disease, but the presence of these bacilli in a water supply indicates that human excreta is finding its way into the water, and if a Typhoid carrier happens to come along and use the questionable toilet facilities it is possible that Typhoid bacilli along with the colon bacilli will reach the water supply. Thus it is that health departments condemn water showing the presence of colon bacilli, even if there is no indication of Typhoid infection. Their policy is and must be to take no chances.

Bulletins on well construction and on methods of treating questionable waters, as well as on toilet construction and sewage disposal, are available on application to the Provincial Board of Health, Edmonton.

2. Milk

As with water, milk, once having been infected, is capable of rapidly transferring the disease. Milk serves as a medium in which the Typhoid bacilli rapidly multiply. There are many ways by which the milk can be infected, chief of which are by the use of contaminated water in dairies and by careless milking and dairying practice. The

Typhoid "carrier" around a dairy presents a potential danger, because at any time he fails to thoroughly wash following a visit to the toilet, his hands might carry the infection to the milk, either in actual milking or in the handling of the product. There are a number of instances on record where bottles, cream cans, dairy equipment, et cetera, have been carelessly washed with Typhoid contaminated water, with the result that the milk became infected, and an epidemic resulted. There is only one way of being assured of a safe milk supply, and that is by the use of an up to date pasteurizing plant.

3. Flies

In order that Typhoid might be spread by this means, it is essential that the fly must come in direct contact with the excreta from a Typhoid patient or from a carrier. This usually occurs in poorly built outside toilets. The fly visits the toilet, walks around on the available excreta, and then makes its way to some house table, where it alights on the food, with the result that the disease is transferred to the latter. Hence the importance of properly screening all doors and windows and the protection of foodstuffs from contamination by flies.

4. Food

Here, again, the carrier plays his part. Carelessness following visits to a toilet results in his hands being partly covered with the bacilli, and in touching food he transfers them from his hands to the food. For this reason known Typhoid carriers are prohibited, in most countries, from working in dairies, bakeries, restaurants, et cetera. There are some other minor methods of transmitting the disease, but the above mentioned constitute the chief.

PARATYPHOID FEVER

Paratyphoid Fever may occur in one of two forms, generally designated as Paratyphoid "A" and "B", according to the causative organism. Both resemble Typhoid in their symptoms but are milder in their effects. The ways by which Typhoid is transmitted apply to Paratyphoid. Carriers play a similar part in spreading the disease. As in Typhoid, vaccination is practised as a preventive measure, the vaccine being a "mixed" vaccine containing killed Typhoid and Paratyphoid "A" and "B" bacilli.

DYSENTERY

The type of Dysentery commonest in Alberta is that known as bacillary. There is another type—amoebic Dysentery—common to semi-tropical and tropical countries, which is transferred by carriers and differs from the bacillary type in this respect. The amoebic type of Dysentery may develop where ever carriers of this type of the disease are found—particularly if such carriers are employed in food handling establishments. In the case of bacillary Dysentery, the disease persists more or less all the time and increases or decreases as the conditions are favourable or unfavourable to its development and spread. However, both types of Dysentery are transmitted in a similar manner to Typhoid Fever.

In order to successfully combat the intestinal diseases the following precautions should be observed:

1. Do not drink water from ponds, creeks, streams, irrigation ditches, or rivers without some system of purification such as boiling, chlorination, filtration, et cetera.

2. Do not allow privies, barns, et cetera, to be so located that they can contaminate nearby wells or sources of water supply, either by surface flow or underground percolation.

3. Observe the practice of thoroughly washing the hands following a visit to the toilet.

4. Do not interchange dippers, pails, et cetera, between two kinds of water. The use of a family dipper to scoop water from pails containing drinking water and wash water is a dangerous practice.

5. Make outside toilets fly-proof.

6. Provide tight fitting screens for all doors and windows of the home and protect all foodstuffs from contamination by flies.

7. Destroy the fly by eliminating its breeding places and by killing every fly found in the home, in the dairy, or in any place where food is stored.

8. Observe the "golden rule" in health matters.